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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/524,241   | 02/10/2005  | Tadashi Kuroiwa      | Q85339              | 4606             |
| 23373 7590 03/10/2009<br>SUGHRUE MION, PLLC<br>2100 PENNSYLVANIA AVENUE, N.W.<br>SUITE 800<br>WASHINGTON, DC 20037 |             |                      |                     |                  |
| EXAMINER   |             |                      |                     |                  |
| ELVE, MARIA ALEXANDRA  |             |                      |                     |                  |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
| 3742   |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/524,241

Applicant(s)

KUROIWA ET AL.

Examiner

M. Alexandra Elve

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 12-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (USPAP 2002/0153361A1) in view of Filgas et al. (USPAP 2003/0160034A1).

Sakamoto et al. discloses:

A laser machining device according to the invention is provided with a laser oscillator for generating a laser beam, a main deflecting galvanometer mirror, an F $\theta$  lens, and a sub deflecting means arranged in an optical path between the laser oscillator and the main deflecting galvanometer mirror. A means for splitting a laser beam is provided, and the sub-deflecting means is inserted into the optical path of one of the split laser beams. At the same time, both the split laser beams are incident from the same main deflecting galvanometer mirror to the F $\theta$  lens, and a numerical aperture in the optical system constituted by the main deflecting galvanometer mirror, the F $\theta$  lens and an object are set to be not more than 0.08.

the laser machining device has:

a first scanner for deflecting a traveling direction of a first laser beam to an arbitrary direction with a mirror;

a second scanner for deflecting traveling directions of a second laser beam and the first laser beam passing through the first scanner to arbitrary directions with mirrors; and

a lens for converging the second laser beam and the, first laser beam passing through the second scanner.

In addition, the laser machining device has a configuration in which the first laser beam and the second laser beam have different polarization directions, and

a beam splitter which reflects one laser beam and transmits the other laser beam is arranged in front of the second scanner such that the laser beams from the beam splitter are propagated to the second scanner.

The laser machining device further has:

an oscillator;

a diffractive optics for splitting a linearly polarized laser beam oscillated from the oscillator into a first laser beam and a second laser beam; and

a phase plate for changing the polarization direction of the second laser beam.

The laser machining device still further has:

an oscillator; and

a spectral beam splitter for splitting a circularly polarized laser beam oscillated from the oscillator into a first laser beam and a second laser beam having different polarization directions...

Sakamoto et al. does not specifically disclose three polarizers or the use of a deformable mirror.

Filgas et al. discloses a laser system having:

...polarizing, are provided in a plurality of sections ... along the direction of beam propagation...

...Fold mirrors or prisms 416 are used to direct the output...

It would have been obvious to one of ordinary skill in the art at the time of the invention to use multiple polarizers and a fold (deformable) mirror as taught by Filgas et al. in the Sakamoto et al. apparatus because the a third polarizers is merely an addition of multiples and a form mirror allows for more maneuverability. Duplication of parts was held to be obvious. In re Harza 124 USPQ 378.

### ***Response to Arguments***

Applicant's arguments filed 12/30/08 have been fully considered but they are not persuasive.

Applicant argues that Sakamoto et al. does not teach polarizing beam splitters. The examiner respectfully disagrees because 21, 28 & 29 are all polarizing beam splitters. Figure 8 shows two polarizing beam splitters 28 and 29.

Applicant argues that Filgas et al. does not teach a polarizing beam splitter. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Sakamoto et al. teaches two polarizing beam splitters, while Filgas et al. teaches multiple beam splitters.

Applicant argues that angle adjustment is not taught. The examiner respectfully disagrees because Sakamoto et al. discloses that the polarized beam splitter yields beams with differing angles.

Applicant argues that Sakamoto et al. and Filgas et al. do not teach focal position measurement. The examiner respectfully notes that the distance between the lens and the object and the focal distance/position is disclosed by Sakamoto et al.

Applicant argues that a deformable mirror is a mirror that changes its shape and is not taught by the prior art. A foldable mirror is a deformable mirror. Thus the claim limitations are met.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 7:30-4:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B. Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

March 8, 2009.

/M. Alexandra Elve/  
Primary Examiner, Art Unit 3742